

WHAT IS CLAIMED IS:

1. An optical connector comprising a first connector element holding a first optical fiber and a second connector element holding a second optical fiber, the first and the second connector elements cooperating with each other to obtain a connected state in which exposed longitudinal ends of the first and the second optical fibers are brought into contact with each other, wherein the first optical fiber comprising:

a long fiber portion having longitudinal ends;

a short fiber portion higher in breakage resistance than the long fiber portion and having longitudinal ends; and

a fusion connection portion where one of the longitudinal ends of the short fiber is fused to one of the longitudinal ends of the long fiber portion, another of the longitudinal ends of the short fiber portion being exposed to serve as the exposed longitudinal end of the first optical fiber.

2. An optical connector according to claim 1, wherein the first connector element comprises a main body, a clamp portion holding the first optical fiber, and a cover fixing the clamp portion to the main body.

3. An optical connector according to claim 2, wherein the clamp portion has an opening portion, the fusion bonding portion is disposed in the opening portion.

4. An optical connector according to claim 3, wherein the opening portion is filled with an adhesive, the fusion bonding portion being protected by the adhesive.

5. An optical connector according to claim 1, wherein the second optical fiber comprising:

a long fiber portion having longitudinal ends;

a short fiber portion higher in breakage resistance than the long fiber portion of the second optical fiber and having longitudinal ends; and

a fusion connection portion where one of the long fiber portion of the second optical fiber is fused to one of the longitudinal ends of the long fiber portion of the second optical fiber, another of the longitudinal ends of the short fiber portion of the second optical fiber being exposed to serve as the exposed longitudinal end of the second optical fiber.

6. An optical connector according to claim 5, wherein the connected state is accompanied with bending of at least one of the short fiber portions of the first and the second optical fibers.

7. An optical connector according to claim 5, wherein the second connector element has a main body, a clamp portion holding the second optical fiber, and a cover fixing the clamp portion to the main body.

8. An optical connector according to claim 7, wherein the clamp portion of the second connector element has an opening portion in which the fusion connection portion of the second optical fiber being disposed in the opening portion of the clamp portion of the second connector element.

9. An optical connector according to claim 8, wherein the opening portion of the clamp portion of the second connector element is filled with an adhesive, the fusion connection portion of the second optical fiber being protected by the adhesive in the opening portion of the clamp portion of the second connector element.

10. An optical connector according to claim 1, further comprising an adapter for receiving the longitudinal ends of the first and the second optical fibers when the connection state is obtained.

11. An optical connector according to claim 1, wherein the short fiber portion has a polymer layer formed on its outer peripheral surface.

12. A connector element for connecting a connection object and comprising:

an optical fiber; and

a clamp portion holding the optical fiber,

the optical fiber including:

a long fiber portion having longitudinal ends; and

a short fiber portion connected to one of the longitudinal ends of the long fiber portion and having high breakage resistance and flexibility, the short fiber portion having a connecting end protruding from the clamp portion to be brought into contact with said connection object.